Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

Cop. 8

LIBRARY
RECEIVED

UNITED STATES GRADES FOR GRAIN SORGHUMS

RECOMMENDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE

H. J. BESLEY
In Charge, Grain Division
E. G. BOERNER
Grain Supervisor, In Charge, and
B. E. ROTHGEB
Specialist, Grain Investigations
Bureau of Agricultural Economics

UNITED STATES DEPARTMENT OF AGRICULTURE
DEPARTMENT CIRCULAR 245

Washington, D. C. September, 1922

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1922

UNITED STATES GRADES FOR GRAIN SORGHUMS.

Recommended by the United States Department of Agriculture.[1]

The following grades for the grading and marketing of the grain sorghums are recommended by the Bureau of Agricultural Economics of the United States Department of Agriculture. They are the result of extensive investigations relating to the various phases of the grain-sorghum industry, including production, conducted by the Department of Agriculture and of suggestions received from grain dealers and grain inspectors who have a knowledge of this grain.

These grades are not fixed and established under the United States grain standards act at this time, but it is hoped that they will be adopted by all agencies engaged in the handling of grain sorghums. It is believed that with the voluntary and general support of all interested parties these grades will provide a basis for uniform grading throughout the United States and will assist materially in the marketing of the grain sorghums.

UNITED STATES GRADES FOR GRAIN SORGHUMS.

For the purpose of the United States grades for grain sorghums:

SECTION 1. *Grain sorghums.*—Grain sorghums shall be any grain which consists of kafir, milo, durra, feterita, darso, freed sorgo, kaoliang, schrock kafir, and shallu, and any hybrids between these classes, and not more than 35 per cent of nongrain sorghums, other cereal grains, and "foreign material and cracked kernels," as defined in these standards, either singly or in any combination.

SECTION 2. *Basis of determinations.*—Each determination of general appearance, temperature, odor, smut, moisture, test weight per bushel, "foreign material and cracked kernels," "sand, dirt, and finely broken kernels," and insects injurious to stored grain shall be upon the basis of the lot of grain as a whole, and all other determinations shall be on the basis of the grain when free from foreign material and cracked kernels.

SECTION 3. *Percentages.*—Percentages, except in the case of moisture, shall be percentages ascertained by weight.

SECTION 4. *Percentage of moisture.*—Percentage of moisture in grain sorghums shall be that ascertained by the moisture tester and the method of use thereof for kafir, as described in Circular 72, and supplement thereto, issued by the United States Department of Agriculture, Bureau of Plant Industry, or ascertained by any device and method giving equivalent results.

SECTION 5. *Test weight per bushel.*—The test weight per bushel shall be the test weight per Winchester bushel, as determined by the testing apparatus and the method of use thereof as described in Bulletin 472,

[1] These grades embody the recommendations of the U. S. Department of Agriculture, but are not fixed and established at this time under the United States grain standards act because of a lack of funds for their proper enforcement as compulsory standards.

7693°—22

dated October 30, 1916, issued by the United States Department of Agriculture, or as determined by any device and method giving equivalent results.

SECTION 6. *Other grains.*—Other grains shall include wheat, nongrain sorghums, corn, oats, barley, rye, emmer, spelt, einkorn, rice, cultivated buckwheat, and flaxseed only.

SECTION 7. *Nongrain sorghums.*—Nongrain sorghums shall include the grain of sorgo (commonly called "cane seed"), broomcorn, Sudan grass, and Johnson grass, and hybrids between any combination of the groups of the nongrain sorghums.

SECTION 8. *Foreign material and cracked kernels.*—Foreign material and cracked kernels shall be grains and pieces of grains of grain sorghums, and all matter other than grain sorghums which will pass through a No. 8 sieve, and all foreign material, except other grains, remaining on such sieve after screening.

SECTION 9. *Sand, dirt, and finely broken kernels.*—Sand, dirt, and finely broken kernels shall be finely broken kernels, sand, and all other material which will pass through a No. 2½ sieve and all inert matter remaining on either the No. 2½ or No. 8 sieve after screening.

SECTION 10. (*a*) *No. 2½ sieve.*—A metal sieve perforated with round holes 2½ sixty-fourths of an inch in diameter.

(*b*) *No. 8 sieve.*—A metal sieve perforated with triangular perforations 8 sixty-fourths of an inch long on each side of perforation.

SECTION 11. *Damaged kernels.*—Damaged kernels shall be all grains and pieces of grains of grain sorghums which are heat-damaged, sprouted, frosted, badly ground-damaged, moldy, or otherwise distinctly damaged.

SECTION 12. *Heat-damaged kernels.*—Heat-damaged kernels shall be grains and pieces of grains of grain sorghums or other grains which have been distinctly discolored or damaged by external heat or as a result of heating caused by fermentation.

CLASSES AND SUBCLASSES OF GRAIN SORGHUMS.

SECTION 13. *Classes and subclasses.*—Grain sorghums shall be divided into classes and subclasses as follows:

Class I. Kafir.

This class shall include all varieties of kafir and hegari, except schrock kafir, and may include not more than 10 per cent of other grain sorghums. This class shall be divided into two subclasses, as follows:

White kafir.—This subclass shall include all kafir and hegari, except schrock kafir, consisting of 90 per cent or more of white kernels, including other classes and nongrain sorghums. Red spots or other natural coloring upon kernels otherwise white shall not affect their classification as white kafir.

Kafir.—This subclass shall include all kafir and hegari, except schrock kafir, not coming within the classification for white kafir.

Class II. Milo.

This class shall include all varieties of milo, and may include not more than 10 per cent of other grain sorghums. This class shall be divided into two subclasses, as follows:

Yellow milo.—This subclass shall include all milo consisting of 90 per cent or more of yellow kernels, including other classes and non-grain sorghums.

Milo.—This subclass shall include all milo not coming within the classification for yellow milo.

Class III. Durra.

This class shall include all varieties of durra, and may include not more than 10 per cent of other grain sorghums. This class shall be divided into two subclasses, as follows:

White durra.—This subclass shall include all durra consisting of 90 per cent or more of white kernels, including other classes and non-grain sorghums. Red spots or natural coloring upon kernels otherwise white shall not affect their classification as white durra.

Durra.—This subclass shall include all durra not coming within the classification for white durra.

Class IV. Feterita.

This class shall include all varieties of white feterita, and may include not more than 10 per cent of other grain sorghums. Red spots or natural coloring upon kernels otherwise white shall not affect their classification as white feterita.

Class V. Darso.

This class shall include all varieties of darso, and may include not more than 10 per cent of other grain sorghums.

Class VI. Freed Sorgo.

This class shall include all varieties of freed sorgo, and may include not more than 10 per cent of other grain sorghums.

Class VII. Brown Kaoliang.

This class shall include all varities of brown kaoliang, and may include not more than 10 per cent of other grain sorghums.

Class VIII. Schrock Kafir.

This class shall include all varieties of schrock kafir, and may inlude not more than 10 per cent of other grain sorghums.

Class IX. Shallu.

This class shall include all varieties of shallu, and may include not cmore than 10 per cent of other grain sorghums.

NOTE.—Any grain sorghum or grain-sorghum hybrid not mentioned in classes I to IX, inclusive, shall be included in the class which it most nearly resembles.

SECTION 14. *Mixed grain sorghums.*—Mixed grain sorghums shall be any mixture of grain sorghums not provided for in the classes I to IX, inclusive.

Mixed grain sorghums shall be graded according to each of the grade requirements common to the class of the grain sorghums which predominates over each other class in the mixture. The grade designa-

tion of "Mixed grain sorghums" shall include, successively, the number of the grade or the words "Sample grade," the word "Mixed," and, in the order of its predominance, the name and approximate percentage of each of at least two classes.

SECTION 15. *Weevily grain sorghums.*—Weevily grain sorghums shall be grain sorghums which are infested with live weevils or other insects injurious to stored grain.

Weevily grain sorghums shall be graded and designated according to the grade requirements of the grade applicable to such grain sorghums if they were not weevily, and there shall be added to and made a part of the grade designation the word "weevily."

SECTION 16. *Smutty grain sorghums.*—Smutty grain sorghums shall be all grain sorghums which have an unmistakable odor of smut or which contain smut masses.

Smutty grain sorghums shall be graded and designated according to the grade requirements of the grade applicable to such grain sorghums if they were not smutty, and there shall be added to and made a part of the grade designation the word "smutty."

GRADE REQUIREMENTS.

SECTION 17. The subclasses white kafir, kafir, yellow milo, milo, white durra, and durra, and the classes feterita, darso, freed sorgo, brown kaoliang, schrock kafir, and shallu shall be divided into five grades for each subclass and class, as the case may be, the designation and requirement of which, respectively, shall be as follows:

No. 1 white kafir,
No. 1 kafir,
No. 1 yellow milo,
No. 1 milo,
No. 1 white durra,
No. 1 durra,
No. 1 feterita,
No. 1 darso,
No. 1 freed sorgo,
No. 1 brown kaoliang,
No. 1 schrock kafir, and
No. 1 shallu, each, except as provided in item (*g*) below—

(*a*) shall be cool, of natural odor, and good color;
(*b*) shall have a test weight per bushel of at least 55 pounds;
(*c*) may contain not more than 14 per cent of moisture;
(*d*) may contain not more than 2 per cent of damaged kernels, which may include not more than 0.2 per cent of heat-damaged kernels, including grain sorghums and other grains;
(*e*) may contain not more than 3 per cent of other grains, which may include not more than 1 per cent of nongrain sorghums;
(*f*) may contain not more than 3 per cent of foreign material and cracked kernels, which may include not more than 0.5 per cent of sand, dirt, and finely broken kernels; and
(*g*) No. 1 white kafir and No. 1 white durra, each, shall contain not less than 95 per cent of white kernels, including white kernels of other classes and nongrain sorghums. No. 1 yellow milo shall contain not less than 95 per cent of yellow kernels, including yellow kernels of other classes and nongrain sorghums.

No. 2 white kafir,
No. 2 kafir,
No. 2 yellow milo,
No. 2 milo,
No. 2 white durra,
No. 2 durra,
No. 2 feterita,
No. 2 darso,
No. 2 freed sorgo,
No. 2 brown kaoliang,
No. 2 schrock kafir, and
No. 2 shallu, each—

(*a*) shall be cool, of natural odor, and may be slightly discolored;
(*b*) shall have a test weight per bushel of at least 53 pounds;
(*c*) may contain not more than 15 per cent of moisture;
(*d*) may contain not more than 5 per cent of damaged kernels, which may include not more than 0.5 per cent of heat-damaged kernels, including grain sorghums and other grains;
(*e*) may contain not more than 5 per cent of other grains, which may include not more than 3 per cent of nongrain sorghums; and
(*f*) may contain not more than 6 per cent of foreign material and cracked kernels, and may include not more than 1 per cent of sand, dirt, and finely broken kernels.

No. 3 white kafir,
No. 3 kafir,
No. 3 yellow milo,
No. 3 milo,
No. 3 white durra,
No. 3 durra,
No. 3 feterita,
No. 3 darso,
No. 3 freed sorgo,
No. 3 brown kaoliang,
No. 3 schrock kafir, and
No. 3 shallu, each—

(*a*) shall be cool, of natural odor, and may be discolored;
(*b*) shall have a test weight per bushel of at least 51 pounds;
(*c*) may contain not more than 16 per cent of moisture;
(*d*) may contain not more than 10 per cent of damaged kernels, which may include not more than 1 per cent of heat-damaged kernels, including grain sorghums and other grains;
(*e*) may contain not more than 7 per cent of other grains, which may include not more than 5 per cent of nongrain sorghums; and
(*f*) may contain not more than 10 per cent of foreign material and cracked kernels, which may include not more than 2 per cent of sand, dirt, and finely broken kernels.

No. 4 white kafir,
No. 4 kafir,
No. 4 yellow milo,
No. 4 milo,
No. 4 white durra,
No. 4 durra,

No. 4 feterita,
No. 4 darso,
No. 4 freed sorgo,
No. 4 brown kaoliang,
No. 4 schrock kafir, and
No. 4 shallu, each—

(*a*) shall be cool, may be musty, sour, and badly discolored;
(*b*) shall have a test weight per bushel of at least 49 pounds;
(*c*) may contain not more than 18 per cent of moisture;
(*d*) may contain not more than 15 per cent of damaged kernels, which may include not more than 3 per cent of heat-damaged kernels, including grain sorghums and other grains;
(*e*) may contain not more than 10 per cent of other grains, which may include not more than 10 per cent of nongrain sorghums; and
(*f*) may contain not more than 15 per cent of foreign material and cracked kernels, which may include not more than 3 per cent of sand, dirt, and finely broken kernels.

Sample grade white kafir,
Sample grade kafir,
Sample grade yellow milo,
Sample grade milo,
Sample grade white durra,
Sample grade durra,
Sample grade feterita,
Sample grade darso,
Sample grade freed sorgo,
Sample grade brown kaoliang,
Sample grade schrock kafir, and
Sample grade shallu, each—

shall be grain sorghum of the subclasses white kafir, kafir, yellow milo, milo, white durra, durra, and of the classes feterita, darso, freed sorgo, brown kaoliang, schrock kafir, and shallu, which does not come within the requirements of any of the grades from No. 1 to No. 4, inclusive, or which has any commercially objectionable foreign odor, or is heating, hot, or otherwise of distinctly low quality.

APPENDIX.

United States grades for grain sorghums tabulated and abridged.

Grade No.	Condition and general appearance.	Minimum test weight per bushel.	Maximum limits of—						
			Moisture content.	Damaged kernels.		Other grains.		Foreign material and cracked kernels.	
				Total.	Heat damaged (grain sorghums or other grains).	Total.	Non-grain sorghums.	Total.	Sand, dirt, and finely broken kernels.
		Pounds.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
1	Shall be cool and of natural odor, and good color	55	14	2	0.2	3	1	3	0.5
2	Shall be cool and of natural odor, and may be slightly discolored	53	15	5	.5	5	3	6	1.0
3	Shall be cool and of natural odor, and may be discolored	51	16	10	1.0	7	5	10	2.0
4	Shall be cool and may be musty, sour, or badly discolored	49	18	15	3.0	10	10	15	3.0

SAMPLE GRADE: Shall be white kafir, kafir, yellow milo, milo, white durra, feterita, darso, freed sorgo, brown kaoliang, schrock kafir, or shallu, respectively, which does not come within the requirements of any of the grades from No. 1 to No. 4, inclusive, or which has any commercially objectionable foreign odor, or is heating, hot, or otherwise of distinctly low quality.

[1] Grade No. 1 for white kafir and white durra shall consist of 95 per cent or more of white kernels, including other classes and nongrain sorghums. Grade No. 1 for yellow milo shall consist of 95 per cent or more of yellow kernels, including other classes and nongrain sorghums.

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
5 CENTS PER COPY

▽